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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,603	01/14/2002	John Briar	ST1998-003 B	7470

7590 10/23/2002
George O. Saile
20 McIntosh Drive
Poughkeepsie, NY 12603

EXAMINER

PATEL, ISHWARBHAI B

ART UNIT PAPER NUMBER

2827

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/043,603

Applicant(s)

BRIAR ET AL.

Examiner

Ishwar (I. B.) Patel

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because figures are improperly cross hatched. All of the parts shown in section, and only those parts, must be cross hatched. The cross hatching patterns should be selected from those shown on page 600-81 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al., US Patent 5,901,041, hereafter Davies, in view of Johnson US Patent 5,888,849.

Regarding claim 11, Davies discloses a molded flexible circuit assembly, comprising:

a flexible tape (flexible tape film 14, see figure 1-2, column 3, 15-30);

a circuit die attached to said flexible tape (semiconductor die 12, see figure 1-2, column 3, line 15-45);

an encapsulation units formed of molded encapsulation material, wherein circuit die is covered by said encapsulation units (upper molded body 22, see figure 1-2, column 3, line 46-60); and

a molded stiffener formed of said molded encapsulation material (lower molded body 24, see figure 1-2, column 3, line 46-60), except;

Davies is disclosing such assembly for one unit only and not the multiple units. However, it is known in the art to have multiple circuits dies unit on one substrate and isolated at the end of the process to have increase production rate. Johnson discloses one such unit with support structure with more than one circuit die. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the assembly of Davies with multiple units in order to increase the productivity.

Regarding claim 12, Davies further discloses the molded encapsulation material is epoxy (molded body 20 made of epoxy resin, column 3, line 46-55).

Regarding claim 13, Davies further discloses the flexible tape is a polyimide tape (column 3, line 15-30).

Regarding claims 14 and 15, Davies further discloses the flexible tape with electrical traces and via connecting first and second surface, (see figure 2, column 15-30).

Regarding claim 16, though Davies discloses additional mean of stiffening said flexible tape, to provide such additional support or not will depend upon various parameter such as number and size of the component, the method of handling and assembly etc. Johnson discloses one such assembly without any additional stiffener. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the modifies assembly of Davies without additional stiffener in order same cost and time.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Karnezos, Marrs et al., Freyman et al., Lake and Dordi disclose circuit board assembly similar to applicant's claimed invention.

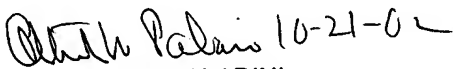
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
October 19, 2002

 10-21-02
ALBERT W. PALADINI
PRIMARY EXAMINER